

February 26, 2007

Regarding PS 06-229, WT 96-86

The Honorable Kevin J. Martin
Chairman, Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Dear Chairman Martin:

Most Americans assume that our nation's first responders can communicate with each other and share data when responding to a crisis. As we are all too aware, that assumption is absolutely wrong. Years after the first World Trade Center bombing, the Oklahoma City bombing, the September 11th terrorist attacks and, most recently, Hurricane Katrina, our nation's first responders still cannot easily exchange information during a crisis.

The federal government addressed this issue and built a foundation for change with several actions and pieces of important legislation in recent years, including the WARN Act (part of the SAFE Port Act of 2006), the Department of Homeland Security Appropriations Act of 2007 and the DTV Act (part of the Deficit Reduction Act of 2005). Working in concert, these legislative initiatives help put the United States on a path toward imminent deployment of interoperable systems.

As our recently co-authored paper—"21st Century Communications Systems for First Responders: The Right Call" (copy attached)—demonstrates, the charge is to now to execute upon these positive actions. Moreover, all levels of government must work with public safety officials to provide the most advanced technologies available and ensure that communications among all first responders, regardless of agency or jurisdiction, are seamless and failsafe.

As you know, the DTV Act prescribes a clear timeline and methodology for freeing up 24 MHz of valuable spectrum for first responders' communications. It also specifies that the balance of the spectrum being vacated by television broadcasters' at 700 MHz will be auctioned by the government and proceeds directed to upgrade communications tools for public safety, clear the spectrum itself, and other important needs.

In our paper we asked that the FCC ensure the 24 MHz of prime, new public safety spectrum is used for advanced communications systems—we cannot waste a single hertz on technologies that are not interoperable. The FCC has taken a significant step in furtherance of that goal with the NPRM and, as we also noted in a recent Opinion Editorial (copy attached), taken up the charge to ensure we maximize the efficiency and effectiveness of this 24 MHz of spectrum in building an advanced, interoperable emergency communications network. The FCC's actions are a critical step in making interoperability a reality and we applaud those efforts.

We finally have the policy and technology tools in place and we have the right spectrum. But this new spectrum requires technology that is both forward looking as well as backward compatible. It needs smart funding mechanisms in place. And it requires the kind of leadership we're seeing today.

We must complete the DTV transition and complete the auction as soon as practicable to deliver the interoperability to first responders that America needs and first responders deserve. It is imperative that we move forward without hesitation.

We again applaud your leadership and look forward to working with all stakeholders on this important issue.

Michael D. Gallagher
Perkins Coie, LLP
607 14th Street
Suite 800
Washington, DC 20005
202-434-1604

Larry Irving
Irving Information Group
1050 Connecticut Avenue
Suite 1000
Washington, DC 20036
202-772-4151

Cc:
Commissioner Michael Copps
Commissioner Jonathan Adelstein
Commissioner Deborah Taylor Tate
Commissioner Robert McDowell

21ST CENTURY COMMUNICATIONS SYSTEMS FOR FIRST RESPONDERS: THE RIGHT CALL

BY LARRY IRVING AND MICHAEL D. GALLAGHER

NOVEMBER 30, 2006

The Vision: *Federal relief agencies, local fire and police departments, and state National Guard units arrive in the downtown core of a west coast city struck by a major earthquake. Thousands of citizens are trapped in fallen buildings and hundreds of thousands more are seeking to escape aftershocks. Local utilities work to re-establish service and eliminate the risk of fires from downed power lines and natural gas leaks.*

Unlike previous disasters, relief and law enforcement agencies can communicate with one another by voice, but can also exchange building diagrams, maps, and video data onsite, in real time. The Department of Defense units called in to assist the National Guard can exchange information so law and order are maintained. Utility companies are able to warn first responders to avoid certain danger zones. Stranded citizens are able to speak live with first responders from their cell phones through real time IP routing of their 911 calls to help on the scene. And, for the hundreds of thousands fleeing the area, authorities are able to transmit harmonized alerts directing them toward roads that are open and passable over multiple communications platforms – short text messages to cell phones; targeted emergency transmissions over satellite radio; and yes, broadcast radio and television.

The Challenge: Today, with rare exception, our public safety communications systems cannot communicate with one another, or with the radio systems used by those they are trying to protect. Just 10 years ago, the above scenario would have seemed like science fiction. But today, by harnessing the power of markets, computers, software, high-speed digital networks, and advances in radio technology, we have the tools to make it reality. In addition, Congress and the Administration have provided the legislative tools required to achieve this vision. All that is needed now is the coordinated leadership of federal, state, and local policymakers, working side-by-side with technology innovators, to fully implement this shared vision.

The History: State and local jurisdictions have a \$60 to \$70 billion¹ installed base of first responder communications systems. Most of that infrastructure is devoted to voice communications within a jurisdiction, or within a single department within a jurisdiction. Current systems tend to be spectrum-inefficient analog systems with individual radios costing a thousand dollars or more.

Our nation's public safety communications infrastructure is not interoperable, meaning first responders cannot communicate seamlessly among jurisdictions at all levels and among departments within a government or agency. In 80% of the cases, first responders

¹ David Bond, "Three Years After 9/11: Connecting America's First Responders," Department of Homeland Security, 9/14/04

cannot coordinate their plans or responses in times of crisis — or even communicate by voice or by exchange of data — with other departments in the same or adjacent jurisdictions. Despite the lessons learned during major national emergencies such as the terrorist attacks on 9/11 and Hurricane Katrina, comprehensive solutions to address the lack of interoperable communications networks have not been implemented.

The lack of interoperability in most cases stems from the continued use by first responders of antiquated radio systems that are not compatible with today's advanced communications and information technology applications. Use of new compatible, interoperable radio systems could save lives, reduce injuries, reduce property damage, and enable faster recovery for communities in the wake of a crisis.

These communication challenges have persisted in large part because of the fragmentation of networks and the lack of dedicated resources committed to fixing the problem. Until the last few decades, the bulk of emergencies were largely "local" and often not technically complex in origin. Local first response units operated on their own and seldom coordinated by radio or data-exchange with neighboring first responders in times of crisis.

Modern Threats Demand Use of 21st Century Technologies: By contrast, today more than 200 million Americans use cell phone technologies that keep them in touch anywhere, anytime. Millions also use wireless Internet-enabled networks and devices that deliver vast amounts of information in almost any format. In 1990 cell phones were largely expensive, voice-only devices. Today's wireless "phones" allow low cost, high-speed access to photos, videos, short messaging, and push-to-talk capabilities. Based on their own technology experience, the public now has higher expectations for communications and coordination among first responders in times of crisis. While our nation continues to face the risks of fires, earthquakes, hurricanes and other natural disasters, we also are faced with the newer 21st century threats of mass-scale terrorism and global pandemics. Even the contamination of our food and water supplies are now a potential national threat requiring close and immediate collaboration among governments.

A strictly local or even regional focus is no longer enough. As both the bipartisan 9/11 Commission and bipartisan majorities in Congress have made clear: Public safety interoperability is a national imperative requiring national leadership that must be solved using 21st century technologies. The benefits of such a system are manifest, and not just in times of natural disaster. Through the use of medical advances applied at the earliest possible moment, we can save American lives impacted by the 6.3 million automobile crashes², 2 million poisonings³, and approximately 400,000 house fires⁴ that occur every year in the US.

² www.car-accidents.com, Accessed 11/28/06

³ Journal of Toxicology: Clinical Toxicology, Volume 37, Number 7 / 1999, pp 817 - 826

⁴ National Fire Protection Association Fire Loss in the U.S. During 2005 Abridged Report, www.usfa.dhs.gov/, Accessed 11/28/06

Interoperability, regional responses and cross-agency and cross-jurisdictional coordination now must be the norm, not the exception. The same market and technological forces that have brought affordable, digital, broadband, cell phones to 71% of Americans can be applied to emergency services to bring robust, low cost innovation to those who most need it: Our first responders.

More spectrum is often considered the keystone for solving the interoperability problem. But the fact is public safety has 100 MHz of spectrum for its use, which could be 50 times as much spectrum per user as is available to commercial cell phone operators. (See Appendix). With the spectrum described below, public safety has plenty of spectrum to meet its communications needs. By harnessing the same technologies that have built three (and soon to be four) broadband wireless networks across the U.S. and partnering with the innovation sector of our economy, public safety users will be able to move their communications capabilities into the 21st century.

The Solution: Leverage the Tools Now Available to Achieve Interoperable Communications Systems for First Responders

Prior to 9/11, the tool box for bringing interoperability to first responder communications systems was bare. The technologies available were sparse and not affordable. The U.S. lacked a national will or even consensus on whether the problem required a solution. Responsible agencies lacked a legislative mandate.

Today, post-9/11 and post-Hurricane Katrina, the tool box is full. Advanced software-based technologies, frequency agile radios, smart antennas, hand-held devices and other innovations are robust and ready for public safety to harness. Standards aimed at achieving voice and information interoperability are in place and evolving. The President and the FCC have issued broad policy directives that require comprehensive and rigorous solutions to the problem⁵. And, several key pieces of legislation now require that the full weight and authority of the federal government be brought to bear to implement effective solutions. Congress, the Administration, federal agencies, state and local governments must work together to accomplish the following imperatives:

Complete the DTV Transition and Open up 24 MHz of Prime Spectrum for Advanced Interoperable Public Safety Networks. The Deficit Reduction Act of 2005 cleared the path for upgrading our over-the-air television from analog to digital. A social windfall of that upgrade will be the recovery of substantial amounts of prime radio frequency spectrum. A significant portion of that spectrum, 24 MHz, representing nearly half the available spectrum in the far more valuable upper frequency band, has been allocated to public safety usage to solve interoperability problems and meet 21st century communications needs. An additional 60 MHz will be auctioned to private sector bidders for billions of dollars. Those funds will be used to pay for the DTV transition and to

⁵ NTIA Spectrum Report "Spectrum Management for the 21st Century," www.ntia.doc.gov, Accessed 11/28/06 ; Presidential Directive, www.ntia.doc.gov/, Accessed 11/28/06 ; 2002 FCC Spectrum Policy Task Force Report, www.fcc.gov/sptf/, Accessed 11/28/06

provide critical funding for various first responder programs, including enhanced 911 services and a nationwide emergency alert system. One-billion dollars of the auction proceeds is dedicated to funding grants to public safety agencies for new interoperable communications systems. Led by the Department of Commerce and the Federal Communications Commission, the spectrum must be cleared and the auction must go forward on schedule. While the FCC is required to begin the auction no later than January 28, 2008, Congress gave it the authority to act sooner, and it should auction the spectrum as soon as practicable to ensure that the proceeds are put to work to benefit public safety at the earliest possible date. The \$1 billion will be a catalyst for moving us toward our interoperable future, and the spectrum will provide enormous capacity for public safety to accomplish their mission.

The Department of Homeland Security Must Develop and Implement a National Plan to Achieve Interoperability. The Department of Homeland Security Appropriations Act of 2007 requires the creation of a new Office of Interoperability and the appointment of a director of that office. Once in place, the director must create a national communications plan providing recommendations on, among other things, how to “ensure, accelerate, and attain interoperable emergency communications nationwide.” To focus the efforts of all stakeholders, the Secretary of Homeland Security should set a date certain for the nation’s emergency communications systems be fully interoperable, with intermediate goals, e.g. 50% of the population within 5 years and 100% within 10 years. The plan must also set broad-based, technically sound, open standards for public safety communications systems that ensure robust capacity in the field and a continuous path for innovation and improvement. A clear and binding plan based on national standards will drive down the cost of deployment and shorten the time for interoperability to be achieved. By focusing on the creation of an interoperability plan that is clear, broadly based, and technically sound, the Secretary of Homeland Security can successfully establish the Office and implement its legislative mandate.

State and Local Governments Must Work Cooperatively to Plan, Build, and Operate Advanced Interoperable Public Safety Networks. The increased threat of wide-scale emergencies and the need for cross-agency and cross-jurisdictional coordination requires a national approach to public safety communications. Fortunately, technologies are available to construct shared national or regional interoperable networks that maximize capabilities at minimal cost. Through the use of IP-based technologies or similar, these networks can provide virtual private network functionality for individual agencies at a cost that is far less than building separate networks. The construction of national or regional networks will provide enormous advantages for first responders and the communities they serve, including inherent interoperability. The increased economies of scale that such networks afford will provide many communities access to advanced capabilities they could never attain if required to fund and construct their own networks. National standards that are clear, competitive, and technically sound will accelerate the development of the necessary economies of scale. To achieve this goal, we need leadership at all levels of government to put these systems into place and a stable source of funding, led initially by the federal government.

The FCC Must Ensure the 24 MHz of Prime, New Public Safety Spectrum is Used for 21st Century Communications Systems. The 24 MHz of prime spectrum coming to public safety is a once in a generation opportunity to answer the national interoperability imperative. Once cleared of existing television services, this spectrum will be a blank slate for deployment of cutting edge, 21st century, digital, broadband, regionally interoperable, IP-based networks. The FCC must ensure that this national resource – with an estimated market value of \$5 billion – is put to the highest and best use by public safety. To do so, the FCC must revise its service rules for the allocation of the 24 MHz to facilitate and require the deployment of interoperable networks. In addition, the FCC should establish rules that promote public-private partnerships that will enable public safety systems planners to maximize the use of innovative technology while minimizing the cost of deployment. Indeed, utilizing IP-based and other emerging technologies, these public safety systems should be able seamlessly to interconnect with and leverage the 3G wireless networks in place today. The FCC should provide public safety with the ability to fully leverage the technical and financial resources, as well as the experience, of the commercial sector. An open and transparent “RFP” process should be used so public safety can solicit the broadest possible range of ideas about how best to put the 24 MHz to use for interoperability purposes — just as the government would do for any other product or service.

The FCC, The Department of Homeland Security and the Private Sector Should Expedite the Widespread, Economically Rational Provision of Emergency Alerts. The WARN Act (Section 601 of the SAFE Port Act of 2006) provides another set of policy tools. A 21st century public safety communications system would be a "safety force multiplier" when linked with an ability to communicate with those being protected. Whether patching a distressed citizen's wireless call to a larger group of first responders, or dispatching via SMS messages escape instructions to an area hit by a natural disaster, true interoperability provides the ability to selectively communicate with the public and utilize newly developed warning capabilities. The FCC in coordination with the DHS has established the Commercial Mobile Service Alert Advisory Committee. This Committee will within one year develop a plan for a national alert system that encompasses broadcast media and wireless services. U.S. telecommunications carriers and related service providers must actively participate in the development of technologies and processes for emergency alerts to be a reality.

Congress and the Administration Must Accelerate the Public Safety Marketplace by Directing Funds Toward 21st Century Interoperable Systems. More than \$2 billion dollars in federal funding have been appropriated for interoperable communications in recent years.⁶ The Administration has the opportunity to further stoke the deployment of interoperable networks by defining the requirements for the \$1 billion in grants funded by the DTV spectrum auction. The 34,000-plus U.S. public safety entities lack the centralized purchasing power required to drive the economic deployment of digital, broadband, regionally interoperable, IP-based communications standards. The federal government can exert its leadership through the strict conditioning of funding going

⁶ Doug Mohney, “Panel: Interoperability About People More Than Technology,” *Mobile Radio Technology*, 11/4/06

forward. Promising examples already exist, including the cooperation occurring in the National Capitol Area, providing effective models going forward.

The \$1 billion in grants will provide an important first step in funding the construction of advanced interoperable emergency communications systems. Taking the necessary steps to conduct the 700 MHz auction as soon as practicable will ensure that these critical funds get into the pipeline as quickly as possible. However, \$1 billion will not be sufficient to deploy advanced networks nationwide. Congress must continue to address the funding needs of first responders and take action to ensure that future funds are available to complete the task.

In 2001, America had few of the necessary tools and lacked the national will to bring interoperability to public safety, particularly our first responders. Today, the goal is in sight. We have the policy tools. The technology is robust and affordable. Now the Administration, Congress and the innovation sector of our economy must work together to get the job done.

The authors both served as Assistant Secretary of Commerce for Communications and Information under Presidents Clinton and George W. Bush. Mr. Irving is President and CEO of the Irving Information Group, and Mr. Gallagher is a Partner with Perkins Coie.

Appendix: Spectrum Allocations for Public Safety

Existing Spectrum Used by Public Safety		
Band (MHz)	Amount (MHz)	Comments
25-50	6.3	VHF Low Band. Conventional dispatch for voice communications. Used by state highway patrols for wide-area coverage. Minimal use due to limited equipment availability.
150-174	3.6	VHF High Band. Conventional dispatch for voice communications. Excellent for wide area coverage.
450-470	3.7	UHF Band. Conventional dispatch for voice communications. Excellent for wide area coverage.
470-512	*	UHF Band. Shared with TV stations. Only available in 11 markets.
806-869	9.5	Both conventional and trunked dispatch systems.
Total	23.1	

* In New York and Los Angeles, public safety is using at about 6 MHz in this band.

New Spectrum for Public Safety Use		
Band (MHz)	Amount (MHz)	Comments
764-806	24	Additional spectrum to come from DTV transition. Currently designated for voice and wideband data, but FCC is conducting proceeding to accommodate broadband uses. Available 2009.
806-869	2.5	Additional spectrum to come from reconfiguration of 800 MHz band by Sprint Nextel. Increased capacity for existing dispatch systems. Available 2008.
4940-4990	50	Exclusive public safety use for broadband applications. Commonly referred to as "Public Safety WiFi" band. Optimal for high density urban areas and incident communications. Available now.
Total	76.5	

Note: This total of 99.6 MHz is used to support approximately 2 million state/local public safety users. By comparison, there are currently approximately 227 million commercial wireless users supported on 190 MHz of commercial mobile spectrum.



If catastrophe strikes tomorrow, are we ready?

By Michael D. Gallagher and Larry Irving

http://news.com.com/If+catastrophe+strikes+tomorrow%2C+are+we+ready/2010-1033_3-6156878.html

If a major catastrophe struck the United States today our first responders would not have the communications capabilities they need to save lives. Our federal, state and local public safety officers lack "interoperability," the ability to communicate effectively and efficiently across jurisdictions. Currently, in most places in the United States, a state police unit cannot directly communicate with a local sheriff. Nor can a county fire chief talk directly to a local firefighting unit or to federal officials.

This is [not a new problem](#). The lack of interoperability for first responders affected the response capability and response times on [Sept. 11, 2001](#) and hampered response during [Hurricane Katrina](#), the first World Trade Center bombing and the Oklahoma City bombing. Our failure to provide modern communications capabilities poses a danger to first responders and to the people they risk their lives to protect.

The 9/11 Commission, correctly in our opinion, was strongly critical of our national failure to solve this dangerous problem. The commission recognized that in the midst of a crisis, first responders cannot talk to one another. Last month the Department of Homeland Security assessed communications interoperability in 75 metropolitan regions across the nation and found that while there has been considerable progress in planning and coordination, there still is much work to be done in implementing operation.

Ensuring interoperability will entail overcoming significant political, technological and financial challenges. It will also require a new way of thinking about and coordinating the activities of public safety officials at every level of government.

In January, the House of Representatives took another important step to improve interoperability by passing legislation that will fund grants for promising interoperable communications technologies. But more, much more, needs to be done. Two key goals must be ensuring more efficient use of radio spectrum and providing the necessary funding to test and deploy new communications technology.

It is encouraging that federal, state and local officials are beginning to demonstrate that leadership is focused on execution and real results. Congress and the White House built a strong foundation for change by enacting the Digital Television Transition and Public Safety Act (DTV)--legislation that was applauded by the [9/11 Commission](#).

The new law reallocates substantial radio spectrum currently being used by television broadcasters and gives 24 MHz of prime, newly-available communications spectrum to our nation's first responders to help facilitate interoperability. And the Federal Communications Commission is taking up the charge to ensure we maximize the efficiency and effectiveness of this spectrum in building an advanced, interoperable emergency communications network for use by public safety officials across the country.

The remainder of the DTV spectrum will be sold at auction to private bidders by the U.S. government. One billion dollars will be used to fund public safety communications upgrades. Billions more will go toward deficit reduction and other important programs.

Assuming the proposed 9/11 legislation presently pending passes both houses, yet another important legislative tool will be in place. We will be one step closer to ensuring interoperability. It is possible, in the very near term, for us to resolve the problem at hand. The appropriate spectrum has been allocated; the technology is available; and critical funding is beginning to flow. We have the wallet. We know the way. Now we just need the will.

We've taken many important steps in recent months, and the pace is picking up with recent DHS and FCC actions. Enacting the 9/11 recommendations by Congress is also very encouraging. That said, it will take more of the strong, consistent leadership we're seeing today to get us to where we need to be: a safer country because those entrusted with protecting us have the [interoperable communications tools](#) they need to do their job.